

The Three States of Matter

Particles of Matter

1. All Matter is made up of atoms and molecules
2. Atoms and molecules are:
 - very small (cannot even be seen with a powerful microscope)
 - Always bumping into each other
 - How they interact with each other determines the state of matter**

Solids

1. Has a definite shape and volume
2. Particles are very close and very, very slow. They almost do not move at all. They have a large attraction.
3. Cannot be compressed
4. Two Types
 - a. Crystalline- have a repeating pattern
Examples- diamonds and ice



- b. Amorphous – have no special Arrangement
Examples- rubber, wax and glass



Liquids

1. Particles move at a steady rate and are separated but still fairly close

2. Change shape but not volume

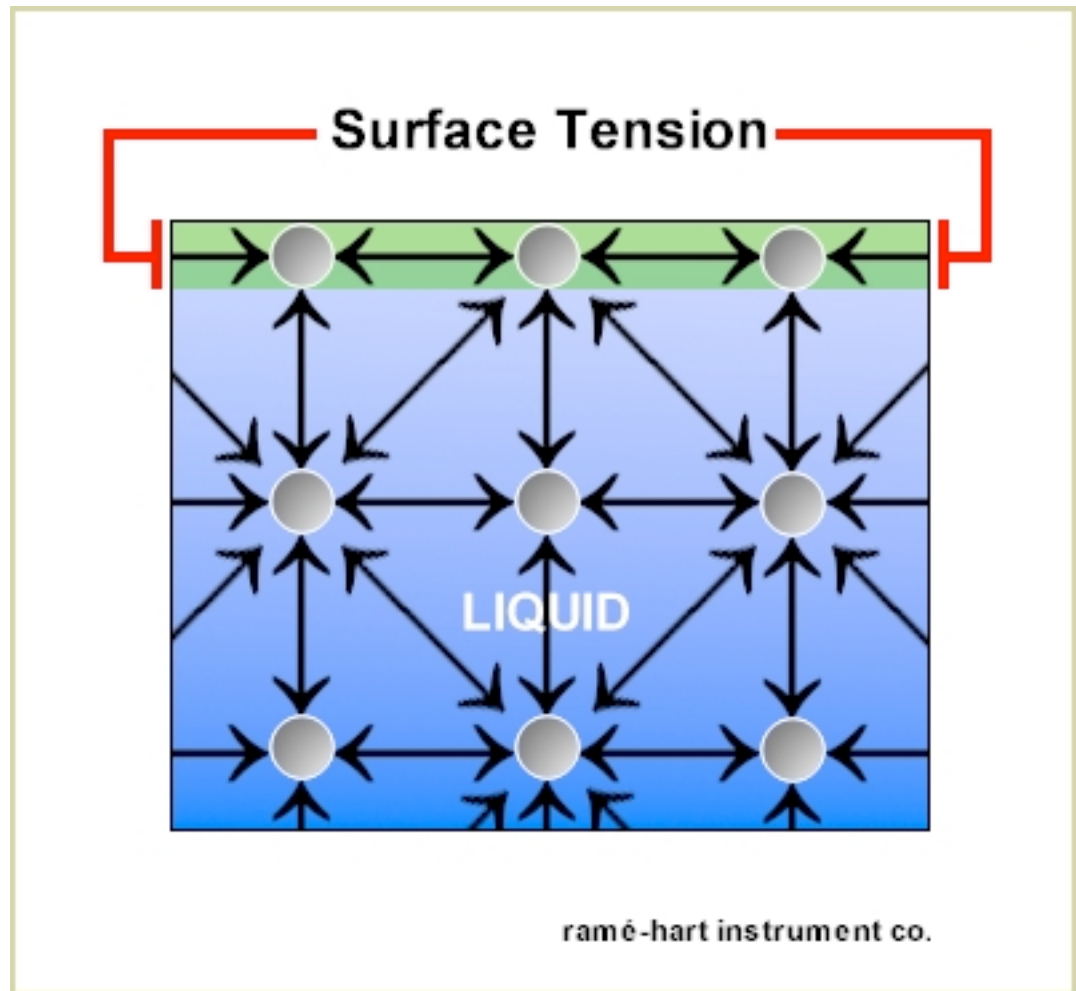
Example pouring soda from a small mug to a large glass

3. Cannot be compressed

4. Unique Characteristics

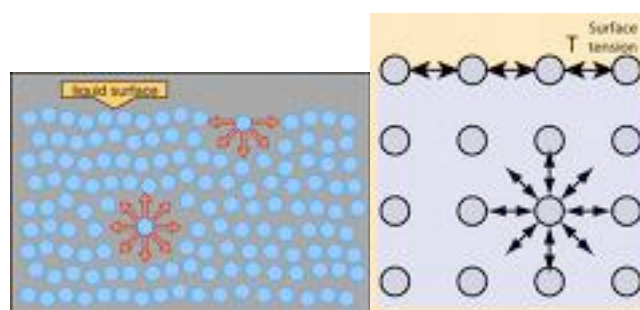
a. Surface tension- a force that acts on particles at the surface of a liquid





More

Less



b. Viscosity- a liquid's resistance to flow or the flow speed

Honey – flows slow-high viscosity

Water – flows fast-low viscosity



What should your car's oil be?
High or Low Viscosity? Why?

Gas

1. Particles move at a fast rate and have little attraction
2. No definite shape or volume
 - take the shape and volume of its container
3. Volume is affected by temperature and pressure.
4. Can be compressed



Plasma

1. Fourth State of Matter
2. Charged Gases
3. Most abundant state in the universe- all of the stars are classified as plasma

